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ABSTRACT

A total of 199 students from a school in Hong Kong responded to 25 items in a survey. Principal components analysis found four school motivation factors consistent with the Task, Effort, Competition and Praise scales of the McInerney, et al. (1997) Inventory of School Motivation, one education aspiration factor and one career aspiration factor. The correlations indicated significant relations between the motivation factors and the aspiration factors. A path model applying a structural equation modeling approach found that Task, Effort, and Competition orientations had relatively stronger impacts on education aspirations whereas Task and Praise had stronger impacts on career aspirations. Analysis of variance found that grade 7 students had relatively stronger impacts on education aspirations whereas Task and Praise had stronger impacts on career aspirations. Analysis of variance found that grade 7 students had significantly higher Task, Effort, and Praise scores and higher career aspirations than students from grades 9 and 11. The drastic drop from grade 7 of motivation scores--especially Task and Effort, both pertaining to a mastery orientation dimension that had been assumed to be a major driving force for excellence--calls for urgent attention to student motivation in junior secondary classes. (Contains 2 tables, 1 figure, and 18 references.) (Author/JDM)

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DOES SCHOOL MOTIVATION CHANGE OVER SECONDARY SCHOOL YEARS?

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Paper presented at the Australian Association For Research In Education 2001 International Education Research Conference at the University of Notre Dame, Fremantle, Western Australia on 2-6 December, 2001.

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The University of Notre Dame, Fremantle, Western Australia

Abstract

A total of 199 students from a school in Hong Kong responded to 25 items in a survey. Principal components analysis found 4 school motivation factors consistent with the Task, Effort, Competition and Praise scales of the McInerney et al. (1997) Inventory of School Motivation, 1 education aspiration factor and 1 career aspiration factor. The correlations indicated significant relations between the motivation factors and the aspiration factors. A path model applying a structural equation modeling approach found that Task, Effort and Competition orientations had relatively stronger impacts on education aspirations whereas Task and Praise had stronger impacts on career aspirations. Analysis of variance found that grade 7 students had significantly higher Task, Effort and Praise scores and higher career aspirations than students from grades 9 and 11. The drastic drop from grade 7 of motivation scores--especially Task and Effort, both pertaining to a mastery orientation dimension that has been assumed to be a major driving force for excellence—calls for urgent attention to student motivation in junior secondary classes.

Traditional models of school motivation distinguished between intrinsic and extrinsic motivation (Deci & Ryan, 1985; Dweck, 1989; Lepper & Hodell, 1989; Spaulding, 1992). More recent models of school motivation examine the goal orientations of students. Goals are cognitive representations of students' purposes in different achievement situations. They are assumed to guide students' behavior, cognition, and affect in their academic work (Ames, 1992; McInerney, 1995; Pintrich, Marx, & Boyle,, 1993; Wentzel, 1991). Of these orientations, social goals and academic goals play an important role in directing behavior toward outcomes that individual students would like to achieve (Ford, 1992; Pervin, 1983; Wentzel, 1998). The present study focuses on the academic goals and examines the differential effects of such goals on outcomes such as education and career aspirations and potential differences of students in their goal orientations and aspirations across grades 7, 9, and 11 in a Hong Kong high school.

Impact Of Academic Goal On Outcomes

Goal orientations may explain reasons for students' desire to achieve in academic work (Ames, 1992, Wentzel, 1998). Similar to the traditional motivation model which treated intrinsic and extrinsic motivation as extremes on a continuum, goal theory, taking on a multidimensional approach, describes mastery and performance goal orientations in academic motivation. Mastery goal orientations represent "desires to achieve outcomes derived from the actual process of learning" (Wentzel, 1998, p. 202). Performance goal orientations represent "desires to achieve outcomes derived from personal expectations or values associated with the consequences of task engagement" (Wentzel, 1998, p. 202). Hence, performance goals are essentially "other-referenced" whereas mastery goals are based on the belief that individual effort leads to success, and that learning has intrinsic value (McInerney, Yeung, & McInerney, 2001).

Researchers have suggested that mastery goals are vital for students' desirable academic behavior, attitude, and achievement of academic outcomes (e.g., McInerney, et al., 2001; Wentzel, 1998). A mastery goal orientation is associated with feelings of satisfaction and competence and the joy of investing an effort in the process of learning. McInerney et al. (2001) proposed two constructs, viz., task and effort, pertaining to the mastery orientation. In contrast, a performance goal focuses on ability relative to others. Students evaluate their competence in terms of how much better they do than other students and how much positive gain they get. Of the performance goal constructs examined by McInerney et al. (2001), the present study used two constructs, viz., competition and praise. Whereas both of the mastery goal orientations and both of the performance goal orientations were expected to be positively associated with outcome variables such as education and career aspirations, the present study examined the relative impacts of these goal orientations on the outcome variables.

Change of Student Motivation Over Time

Because of the impact of motivation on educational outcomes, student motivation in schools has become a major field in educational research. Different goals can have dramatic impacts on achievement outcomes. Even though a performance orientation which emphasizes public recognition for doing better than others in competition and gaining rewards and praise from others may be associated with achievement outcomes, an orientation to the mastery of concepts and the enjoyment of putting in an effort in meaningful learning tasks is believed to be a major driving force for excellence. It would be unfortunate if such a driving force could drop during the years of schooling. Nevertheless, in many countries, any casual observation in any high school would probably reveal that the motivation of high school students do seem to

diminish over the school years. In particular, grade 7 students' eagerness in participation in academic work and their enjoyment of investing an effort in the process of learning can hardly be seen again in grade 11. In the present study, using McInerney, Roche, McInerney, and Marsh's (1997) Inventory of School Motivation (ISM), we attempted to examine this phenomenon in a Hong Kong high school and also to examine the potential changes of education and career aspirations over the school years of grade 7, 9, and 11.

Method

Participants

The participants were Grades 7, 9, and 11 students from a high school in Hong Kong (age ranging from 12 to 18). The school was a co-education high school of students from middle to low socio-economic family background. Consent to participate in the study was obtained from the participants before they completed the survey. After listwise deletion of missing data, 81, 56, and 406 completed surveys respectively from the three grades were analyzed.

Material

The 25 items pertaining to six a priori scales are listed in Appendix. The four school motivation scales were adopted from the McInerney et al. (1997) Inventory of School Motivation (ISM) instrument. The two mastery orientation constructs were Task and Effort and the two performance orientation constructs were Competition and Praise. Two aspiration scales were constructed: Education and Career. The participants responded on a 5-point scale (1 = strongly disagree; 5 = strongly agree). Higher score reflected more favorable responses to the item.

Statistical Analysis

Preliminary analysis included alpha estimates of internal consistency of each of the a priori scales and principal components analysis to test the applicability of the ISM scales to the present sample and the validity of the two aspiration scales. When the scales were established, we then averaged the item scores and conducted further analysis with the mean scale scores. We applied a structural equation modeling approach to examine the relative impact of each of the four goal orientations on the two aspiration outcomes. The conduct of structural equation modeling has been described elsewhere (e.g., Bollen, 1989; Byrne, 1998; Joreskog & Sorborm, 1988) and is not further detailed here. The analysis was conducted with the SPSS version of PRELIS and LISREL (Joreskog & Sorbom, 1988). The advantage of the structural equation modeling approach over conventional multiple regression approaches is that we can examine two

dependent variables at the same time. The same approach has been demonstrated by Marsh and Yeung (1997) in testing the relative impacts of academic achievement and academic self-concept on students' course selection. In the present study, the focus is the paths from four school motivation orientations to two aspiration outcomes. Finally, we tested whether the level of motivation and students' education and career aspirations would change over the years of high school. Using the scale means, we conducted a multivariate analysis of variance (ANOVA) to examine the differences of grades 7, 9, and 11 in their goal orientations and aspirations. To the extent that the difference was statistically significant at .05 level, we conducted Helmert contrasts such that contrast 1 compared grade 7 with grades 9 and 11 scores whereas contrast 2 compared the scores of grade 9 with grade 11.

Results

Reliability and Factor Analysis

The alpha reliability of each scale was good (see Appendix). We conducted a principal components analysis with the 25 response items. Setting the minimum eigenvalue at 1, the six a priori factors were extracted, explaining 62.7% of total variance. The factor loadings were .64, .73, and .56 for Task, .72, .73, .69, and .70 for Effort, .60, .74, .61, .64, and .59 for Competition, .72, .79, .65, .67, .65, and .58 for Praise, .73, .81, .75, and .76 for Education Aspiration, and .76, .81, and .68 for Career Aspiration. Next, it was important to check the correlations among these six factors. The correlations are reported in Table 1. The results show that the correlations among the six factors were all moderate (.32 to .61), indicating that the six factors could be clearly distinguished from one another. These results supported not only the four school motivation factors described in McInerney et al. (1997), but also provided support for the two aspiration factors designed for the present investigation.

Impact of School Motivation on Aspirations

Now that the factors were established, we averaged the scores of items in each scale to form a factor score. Subsequent analyses were based on these factor scores. We first examined the correlations between the school motivation orientations and the aspiration outcomes. All the correlations were moderate and statistically significant (rs = .32 to .55), indicating that all the four school motivation orientations were substantially related to both the education and career aspirations.

Table 1. Solution of Path Model

Factors	TASK		EFFORT		COMPETE		PRAISE		EDUCATION		CAREER	
	FL	Uniq	FL	Uniq	FL	Uniq	FL	Uniq	FL	Uniq	FL	Uniq
ITEM	1	0	1	0	1	0	1	0	1	0	1	0
Paths From Column Variables to Row Variables												
EDUCATION	.22*		.31*		.16*		.04		--		--	
CAREER	.28*		.05		.00		.28*		--		--	
Factor Correlations												
TASK	--											
EFFORT	.60*		--									
COMPETE	.44*		.43*		--							
PRAISE	.48*		.45*		.61*		--					
EDUCATION	.49*		.53*		.41*		.38*		--			
CAREER	.45*		.35*		.32*		.44*		.55*		--	
Residuals	1		1		1		1		.65*		.73*	

Note: N = 199 after listwise deletion of missing data. COMPETE = Competition. This is a saturated model (i.e., df = 0, goodness of fit = 1). The focus of interest is the paths from 4 motivation orientations to Education and Career aspirations. * $p < .05$

Table 2

Means, Standard Deviations, and ANOVA Results for 6 Factors in 3 Groups

	Grade 7 N = 81		Grade 9 N = 56		Grade 11 N = 406					t-values	
Factor	Mean	SD	Mean	SD	Mean	SD	F	MSE	η^2	Contrast1 Grade7vs9&11	Contrast2 Grade9vs11
TASK	4.17	0.63	3.57	0.92	3.61	0.85	13.19**	0.62	.12	5.13**	-0.29
EFFORT	3.39	0.78	3.03	0.76	3.13	0.73	4.10*	0.58	.04	2.80**	-0.69
COMPETITION	3.20	0.91	3.07	0.93	2.91	0.84	1.92	0.80	.02	1.67	0.98
PRAISE	3.28	0.80	3.01	0.79	2.89	0.80	4.55*	0.64	.04	2.89**	0.76
EDUCATION ASP	3.69	0.99	3.50	0.91	3.61	1.02	0.62	0.95	.01	0.93	-0.65
CAREER ASP	4.44	0.73	3.92	0.99	4.28	0.75	6.89**	0.67	.07	2.87**	-2.44

Note: N = 199. Students responded to a 5-point scale with higher scores reflecting more favorable responses. The 4 motivation orientations were Task, Effort, Competition and Praise. The 2 outcomes were Education and Career Aspirations (ASP). Univariate F-tests had a df of (2, 196). * $p < .05$. ** $p < .01$. In Helmert contrasts, contrast 1 compares grade 7 with grades 9 and 11 whereas contrast 2 compares grade 9 with grade 11.

To examine the differential impacts of the goal orientations on each of the aspiration outcomes, we applied a structural equation modeling approach to examine the paths from the four ISM orientations to the two aspiration outcomes (Figure 1). The solution of the path model is presented in Table 1. This model is a saturated model (with df = 0). Thus the model had a perfect goodness of fit (GFI = 1). The focus of interest is the relative magnitude of the paths leading from four school motivation orientations to two aspiration outcomes. Marsh and Yeung (1997) have also used this approach to examine the differential impacts of academic achievement and academic self-concept on students' course selection intentions. This approach has an advantage over conventional multiple regression approaches in that we can examine two dependent variables at the same time. The results show that paths from three of the motivation orientations (Task, Effort, and Competion) to education aspirations were statistically significant (βs = .22, .31, and .16, respectively) whereas the path from Praise to education aspiration was nonsignificant (βs = .04), indicating that the impacts of task, effort and competition orientations had relatively stronger impacts than the Praise orientation on students' aspirations for further education. For career aspirations, the paths from two of the motivation orientations (Task and Praise) to career aspirations were statistically significant (both βs = .28) whereas the three other paths were nonsignificant, indicating that the impacts of the Task and Praise orientations had relatively stronger impacts than the other three orientations on students' aspirations for a better future career.

Multivariate ANOVA

The averaged score of items for each factor was compared across three groups. The means and standard deviations are presented in Table 2. A multivariate analysis of variance (ANOVA) was conducted followed by two difference contrasts (Helmert contrasts) to examine the potential differences among three groups of students (grades 7, 9, and 11). For comparisons that found significant F-values, the first contrast examined the potential difference between grade 7 students and the mean score of students from grades 9 and 11. We hypothesized that grade 7 students would display a significantly higher score than students from grades 9 and 11 in the motivation orientations and the aspiration factors. The second contrast compared grade 9 with grade 11 students. We expected no significant differences between these two categories. The results are presented in Table 2.

Task orientation. There were statistically significant differences among the three groups of teachers, $F(2, 196) = 13.19$, MSE = 0.62, $p < .01$, $\eta^2 = .12$. Helmert contrasts found that

students from grade 7 had significantly stronger task orientations than students from grades 9 and 11 whereas grades 9 and 11 students did not differ between themselves. For a 5-point scale, the score of the grade 7 students seemed to be quite high (M = 4.17). Also, even though lower than grade 7 students, the scores of students from grades 9 and 11 were still quite favorable (Ms = 3.57 and 3.61, respectively).

Effort orientation. There was significant difference among the three groups of students, $F(2, 196) = 4.10$, MSE = 0.58, $p < .05$, $\eta^2 = .04$. Similar to Task orientation results, Helmert contrasts found that students from grade 7 had significantly stronger task orientations than students from grades 9 and 11 whereas grades 9 and 11 students did not differ between themselves. Although theoretically pertaining to the same Mastery dimension (McInerney et al., 1997; McInerney et al., 2001), the scores for the Effort orientation (Ms = 3.39, 3.03 and 3.13, respectively) was not as high as for the Task orientation.

Competition orientation. No significant differences were found among the three groups, $F(2, 196) = 1.92$, MSE = 0.80, $p > .05$, $\eta^2 = .02$. This result showed that the students from different grade levels did not differ in their competition orientation.

Praise orientation. There was significant difference among the three groups, $F(2, 196) = 4.55$, MSE = 0.64, $p < .05$, $\eta^2 = .04$. Helmert contrasts found that students from grade 7 had significantly stronger praise orientations than students from grades 9 and 11 whereas grades 9 and 11 students did not differ between themselves.

Education aspirations. No significant difference was found among the three groups, $F(2, 196) = 0.62$, MSE = 0.95, $p > .05$, $\eta^2 = .01$. This result showed that the students from different grade levels did not differ in their education aspirations.

Career aspirations. There was significant difference among the three groups, $F(2, 196) = 6.89$, MSE = 0.67, $p < .01$, $\eta^2 = .07$. Consistent with patterns found in the Task, Effort, and Praise orientations, Helmert contrasts found that students from grade 7 had significantly higher career aspirations than students from grades 9 and 11 whereas grades 9 and 11 students did not differ between themselves. It was also worth noting that even though there were significant between-group differences, the scores for all grades were remarkably high in career aspirations (Ms = 4.44, 3.92 and 4.28, respectively) than in education aspirations (Ms = 3.69, 3.50, 3.61, respectively).

In sum, the pattern of results was quite consistent for Task, Effort, and Praise orientations and for Career Aspirations. Grade 7 students had higher task involvement, tended

to invest more effort toward excellence, expected more praise from various sources, and had higher aspirations for a desirable future career.

Discussion

In examining the school motivation of the Hong Kong sample, we adopted four scales of the McInerney et al. (1997) ISM instrument. Although the instrument has been validated in Western samples (see McInerney et al., 1997; McInerny et al., 2001), we conducted a principal components analysis to test the applicability of the scales to the present sample of Chinese-speaking high school students in Hong Kong. Whereas the results supported the applicability of the scales, the distinctiveness of two outcome variables, viz., education and career aspirations were also supported. Such results provided good preliminary support for the ISM measures for further examination of the relations among the mastery (intrinsic) and performance (extrinsic) motivation orientations and their relations with the aspiration outcomes.

Not surprisingly, all the four goal orientations were found to be positively associated with both aspiration outcomes. Education aspirations referred to students' aspirations for further studies after secondary education whereas career aspirations meant aspirations of students for better future career after secondary studies. In addition to the conventional approach to correlation study, we also applied a structural equation modeling approach to examine the path from each goal orientation to each outcome construct. As expected, on the basis of theory of a conventional intrinsic-extrinsic motivation continuum, the Task and Effort orientations pertaining to the intrinsic (mastery) dimension were found to have a relatively stronger impact on aspirations for further education than was the Praise orientation that pertains to the extrinsic (performance) motivation dimension. Nevertheless, it is important to note that the results did also show that there were significant correlations between the motivation factors and the two aspiration factors (all rs were positive and statistically significant) demonstrating that all the four school motivation orientations were substantially related to both the education and career aspiration outcomes.

Interestingly, Competition, an extrinsic orientation, also had a stronger impact on education aspiration than Praise, the other extrinsic orientation. This may not be surprising, perhaps because of some special characteristics of the society and schools in Hong Kong. Since the old days as a colony of the United Kingdom, the elite of society in Hong Kong has tended to be those with higher education qualifications who receive higher income (Tsang, 1992). Furthermore, as Tsang (1992) implied, Hong Kong is one of the places where students are

probably most seriously segregated according to their academic achievement. Thus competition is always keen for allocation to a "good" school and to a "good" class.

One of the major focuses of the present study was an investigation of the potential differences among the three groups of students from grades 7, 9 and 11 in their Task, Effort, Competition and Praise orientations and their education and career aspirations. Data analysis revealed that grade 7 students had significantly higher Task, Effort and Praise scores and higher career aspirations than students of grades 9 and 11. A higher task orientation of grade 7 students meant that they were more involved in school work and eager to improve themselves. They would try harder to complete the task in school when compared with students from grades 9 and 11. Students of grade 7 were also found to have significantly stronger Effort orientations than students from grades 9 and 11. This demonstrated that grade 7 students tended to invest more effort striving for excellence in school. We might interpret the results to imply that there tended to be a drastic drop in the scores of Task and Effort orientations when grade 7 students proceeded to grades 9 and 11. This phenomenon is worrisome, as Task and Effort orientations pertain to the mastery dimension described by McInerney et al. (1997) and McInerney et al. (2001) and are often taken as the most important intrinsic driving force for excellence of students in their schooling.

There was also a similar pattern showing a drop in the scores of career aspirations over the years of high school. However, the reason for the relatively lower scores of grades 9 and 11 students than grade 7 students in career aspirations is unclear. It could be due to some unrealistically high hopes of grade 7 students. Perhaps, as the teenagers grow up, their better understanding of the world and of their career opportunities tended to lead to more pessimistic views of their future. Hence, this result should warrant further investigation.

Although the present results are based only on cross-sectional analysis and a stronger scrutiny of the phenomenon would require replication using longitudinal data, experienced teachers would probably agree that the real situation is consistent with the findings. Thus, it is worth exploring possible ways to maintain students' intrinsic motivation from grade 7 throughout their secondary education. Was the drop in mastery orientation due to a mismatch of the curriculum with the students' genuine needs? Were the curriculum contents not appealing enough to the teenagers? Was it because the high school students were continually experiencing failure of all kinds so they finally became defeated by the time they reached grades 9 and 11?

Perhaps the school curriculum need to be improved to become more relevant and practical to the students' daily lives and to their future job seeking. Perhaps the teachers also

need to adopt more innovative teaching methods to arouse students' interest to learn the curriculum contents. With the above issues in mind, policy makers in the education field, educational administrators and school teachers should work together to increase or at least to maintain students' motivation in junior high schools and prevent the severe fall when students proceed on to senior secondary classes. Attention should be drawn to examine the existing education system and policy or classroom practices, and check whether they have unintentionally discouraged students' intrinsic motivation in their school work. It seems that a lot of work needs to be done, but it seems also that we need to find out what is the real cause for the seemingly diminishing motivation of high school students as they proceed from junior to senior secondary.

References

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. Journal of Educational Psychology, 84, 261-271.

Bollen, K. A. (1989). Structural equations with latent variables. New York: Wiley.

Byrne, B. M. (1998). Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming. Mahwah, NJ: Lawrence Erlbaum.

Deci, E. L., & Ryan, R. (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum Press.

Dweck, C. S. (1989). Motivation. In A. Lesgold & R. Glaser. (Eds.), Foundations for a psychology of education (pp. 87-136). Hillsdale, NJ: Erlbaum.

Ford, M. E. (1992). Motivating humans. Newbury Park, CA: Sage.

Joreskog, K. G., & Sorbom, D. (1988). LISREL 7: A guide to the program and application. Chicago: SPSS, Inc.

Lepper, M., & Hodell, M. (1989). Intrinsic motivation in the classroom. In C. Ames, & R. Ames (Eds.), Research on motivation in education (Vol. 3, pp. 73-105). New York: Academic Press.

Marsh, H. W., & Yeung, A. S. (1997). Coursework selection: Relations to academic self-concept and achievement. American Educational Research Journal, 34, 691-720.

McInerney, D. M. (1995). Goal theory and indigenous minority school motivation: Relevance and application. In P. R. Pintrich & M. L. Maehr (Eds.), Advances in motivation and achievement. Vol. 9 (pp. 153-181). Greenwich, CT: JAI.

McInerney, D. M., Roche, L. A., McInerney, V., & Marsh, H. W. (1997). Cultural perspectives on school motivation: The relevance and application of goal theory. American Educational Research Journal, 34, 207-236.

McInerney, D. M., Yeung, A. S., McInerney, V. (2001). Cross-cultural validation of the Inventory of School Motivation (ISM): Motivation orientations of Navajo and Anglo students. Journal of Applied Measurement, 2, 135-153.

Pervin, L. A. (1983). The stasis and flow of behavior: Toward a theory of goals. In M. M. Page (Ed.), Personality—Current theory and research (pp. 1-53). Lincoln: University of Nebraska Press.

Pintrich, P. R., Marx, R. W., & Boyle, R. (1993). Beyond "cold " conceptual change: The role of motivational beliefs and classroom contextual factors in the process of conceptual change. Review of Educational Research, 63, 167-199.

Spaulding, C. L. (1992). Motivation in the classroom. New York: McGraw Hill.

Tsang, W. K. (1992). The class structure in Hong Kong. Hong Kong Institute of Asia-Pacific Studies, the Chinese University of Hong Kong, Hong Kong.

Wentzel, K. R. (1991). Socail and academic goals at school: Motivation and achievement incontext. In M. L., Maehr & P. R. Pintrich (Eds.), Advances in motivation and achievement. A Research Annual. Vol. 7. Greenwich, CT: JAI Press.

Wentzel, K. R. (1998). Social relationships and motivation in middle schools: The role of parents, teachers, and peers. Journal of Educational Psychology, 90, 202-209.

Appendix

Response Items and Alpha Reliabilities of Factors

Factor	Items	Alpha
TASK		.73
	Q30 I like to see that I am improving in my schoolwork.	
	Q31 I need to know that I am getting somewhere with my schoolwork.	
	Q50 When I am improving in my schoolwork I try even harder.	
EFFORT		.77
	Q59 The harder the problem the harder I try.	
	Q70 I try hard at school because I am interested in my work.	
	Q87 I work hard to try to understand something new at school.	
	Q88 I am always trying to do better in my schoolwork.	
COMPETITION		.79
	Q6 Winning is important to me.	

Q38 Coming first is very important to me.

Q47 I like my schoolwork to be compared with others'.

Q79 I am happy only when I am one of the best in class.

Q81 I work harder if I'm trying to be better than others.

PRAISE .84

Q10 Having other people tell me that I did well is important to me.

Q16 Praise from my teachers for my good schoolwork is important to me.

Q21 Praise from my friends for good schoolwork is important to me.

Q36 At school I work best when I am praised.

Q64 I want to be praised for my good schoolwork.

Q94 Praise from my parents for good schoolwork is important to me.

EDUCATION .85

Q5 I hope I can have advanced education.

Q18 I want to go on to college or university education.

Q32 I try my best hoping to get into an advanced educational institution.

Q53 I am eager to do some advanced courses.

CAREER .82

Q12 I wish to get a good job.

Q23 I very much hope to get a good salary when I am employed.

Q34 I hope I will find desirable employment in future.

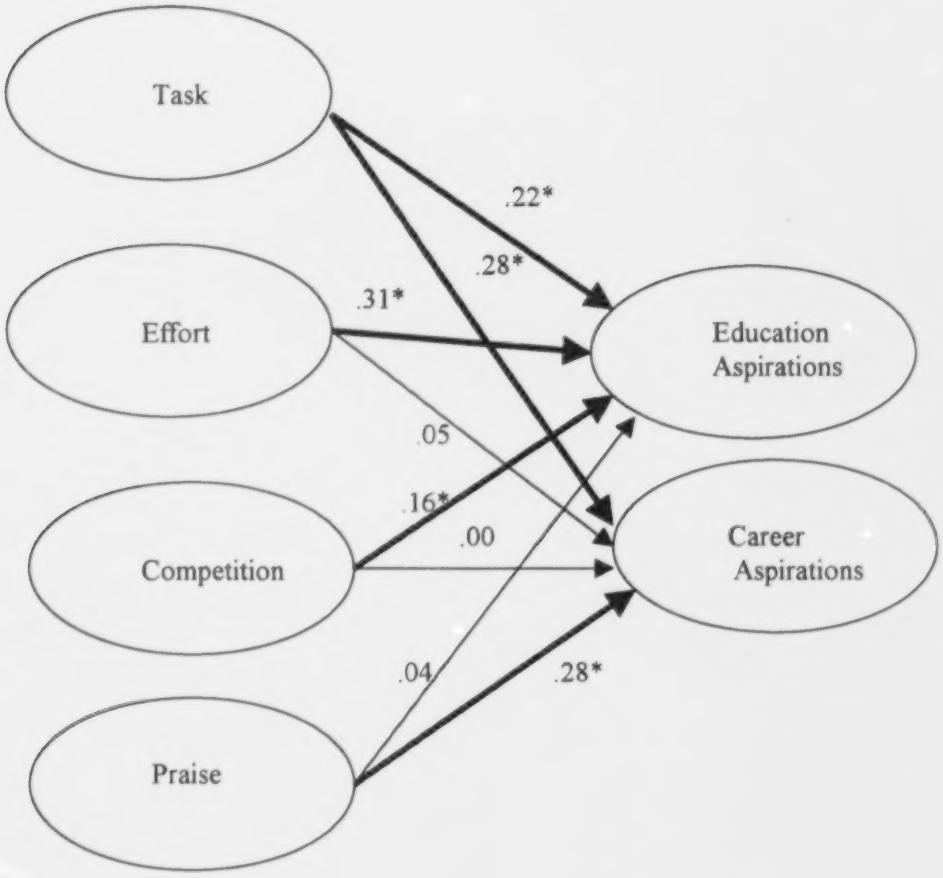

Figure 1. Model showing paths from 4 motivation orientations to 2 aspiration outcomes.